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Lesson Plan - M9_2

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LESSON #2: PET OVER-POPULATION

OVERVIEW:

The purpose of this lesson is for students to gain an understanding of the quantity of dogs in their community and some of the issues related to over-population. Under what conditions should dogs be bred and how are we, as their care-takers, responsible for what we have created?

SUB-QUESTION:

How quickly can I end up with too many dogs in my neighborhood?

WAYS OF KNOWING URBAN ECOLOGY:



Students will...

Understand

- Comprehend the number of puppies that can result from one breeding pair of dogs
- Research some of the complications that result from selective breeding

Talk

- Discuss the ethics associated with breeding
- Discuss our responsibility as humans for the dog breeds we create

Do

- Research a breeding timeline
- Research shelter data on dogs

Act

- Make the community aware of any local issues related to over-population

SAFETY GUIDELINES:

None.

PREPARATION:

Time:

2 class periods

Day 1: Activity 2.1

Day 2: Activity 2.2, 2.3

Materials:

Activity 3.1

PowerPoint presentation “Dog populations”

Dog Breed Data (optional)

Activity 3.2

Copies of articles

- “Inbreeding has destroyed the English bulldog’s genetic diversity”
(<https://www.newscientist.com/article/2099278-inbreeding-has-destroyed-the-english-bulldogs-genetic-diversity/>)
- “Trait Relationships and Genetics in Dogs”
(<http://thebark.com/content/trait-relationships-and-genetics-dogs>)

Activity 3.3

“LA County Animal Care and Control 2015 Data”

Optional additional reading:

Rules for Choosing a Dog Breed (<http://www.dogbreedhealth.com/top-tips-for-choosing-a-dog/>)

INSTRUCTIONAL SEQUENCE**Activity 3.1: How long to reach 1 million?**

1. Use the PowerPoint “Dog populations” concurrently with this activity.
2. Ask students to predict: If we start with 1 spayed female dog and her mate, and all of their puppies, and if none are ever neutered or spayed, how many dogs would there be in 1 year? What about 3 years? 6 years? Chart their responses.
3. Show the poster (slide #2) and discuss.
4. Use the following slides to show how you arrived at 67,000 dogs in 6 years.
 - Golden retrievers have an average lifespan of 10-12 years.
 - One litter averages 8-12 pups.
 - A female can get pregnant beginning at age 14 months and can enter *heat* up to twice a year.
 - Gestation lasts 62 days.
 - Male golden retrievers can breed beginning at 6 months of age.
5. Have students work in small groups to figure out how long it would take to extend this out to a million dogs?
6. Optional extension: Have groups research different dog breeds and repeat this process.

Activity 3.2: Traits and inbreeding

1. Decide if you want all students to read both articles or have half the class read one and half read the other. Give students time to read (or was this homework?)
2. Have students discuss the issues related to inbreeding.
3. Students might want to research inbreeding issues with other breeds and report out their findings.

English Bulldogs: English bulldogs suffer from a range of health problems:

- Its excessive wrinkles are prone to infection unless regularly cleaned.
- It often has breathing problems due to narrow nostrils.
- Eye conditions often cause chronic irritation and pain.
- Deformed spinal bones can lead to incontinence and the loss of use of its back legs.
- Dogs must be delivered using c-section due to their narrow pelvis.

The existing gene pool is too narrow to improve the animals’ health. The breed began around 1835 with 68 individuals. There is now very little diversity left in the gene pool and manipulating it further would reduce diversity even more.

- Rp** 4. Discuss the ethical issues related to the inbreeding of dogs.

Activity 3.3: Who's in your neighborhood?

1. Ask students how they can find out the dogs that live in their neighborhood. Discuss how to locate them and develop a protocol that students can use to locate dogs safely.
 - Should they include photographs?
 - Interview owners about breed and age?
 - What information can they gather safely?
 - Can you learn anything about how owners care for their dogs (How often do they take them for a walk, for medical care, etc.)
2. Once students gather their information, they can document their findings on a map of the neighborhood (post-its on a map work great!).
3. Discuss how to gather and organize the data (tables / graphs).
4. Ask students if they think their neighborhood is typical in terms of dog ownership. Ask how they could find out.
 - Students could compare their maps and data with students from another school.
 - They can go to the County Animal and Control data, which is public, for rates of live release and euthanasia, adoption, etc. (see pdf provided)

Concluding the Lesson:

1. Ask students what they now know about the dogs of your neighborhood? What are their feelings about breeding?
2. Ask students what they see as our responsibility, as humans, to dogs, especially those breeds that we create?

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